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ABSTRACT

It is fundamental in planning to see why and how expenditures on education should be limited and related to other priorities as part of economic and social planning. Integration of education with economic needs involves three elements. First, the identification of the general limits on educational expansion in the economic development planning context. Second, consideration of some of the requirements for economic development. Third, the application of the principle of selection of priorities to the educational system itself as part of economic and social planning. In order that the limited resources available to education should be well spent in relation to economic development, educational planning should consider (1) the integration of primary education with adequate measures for postprimary training as part of rural development; (2) the change and expansion of secondary and higher education in relation to future employment possibilities; (3) the creation of a mass approach to nonformal education whereby those who are working are also learning; (4) the territorial location of educational effort so as to contribute most to other types of development planning; and (5) the unit costs and the efficiency of the educational system. (Author/IRT)

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No. 21 INTEGRATING EDUCATION WITH ECONOMIC NEEDS IN DEVELOPING COUNTRIES

by Raymond F. Lyons

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by

Raymond F. Lyons

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INTRODUCTION

It is fundamental in terms of planning to see why and how expenditures on education should be limited and related to other priorities as part of economic and social planning. If you do one thing with limited resources you cannot do another. Integration of education with economic needs involves three elements. First the identification of what are the general limits on educational expansion in the economic development planning context. Second, consideration of some of the requirements for economic development. Third, the application of the principle of selection of priorities to the educational system itself as part of economic and social planning.

THE INSTITUTIONAL FRAMEWORK

But first a preliminary word of warning. It is absurd to assess or diagnose the situation of education solely in relation to economic factors in the development context. Among the other factors about which one must seek clarity, and which are pre-requisites for development, is the institutional framework, i.e. the administrative arrangements by which the different nationalities and tribes in a country can live in peace, whereby the government is able to act as a central government whose orders are obeyed by regional and local administrators throughout the country and which has the enthusiastic support of the majority of the population and not only that of the minority. It is also important that there should be an adequately trained and competent civil service. These conditions, on which peace, stability and a climate for growth depend, are as important as purely economic conditions and constitute the background for successful economic and educational development. This discussion is, however, limited to a few key factors in economic and educational development.

Limit of Useful Educational Expansion

Turning to our first problem, we have to be careful before we say that in a given situation there are no limits to the useful expansion of education. What are the returns to education? What are its social benefits? We must define the type of education we are talking about, and the relationship of formal educational effort to other types of action. For example, studies conducted in the Soviet Union by Professor Jamin and described in

his paper delivered at IIEP[1] led him to the conclusion that training which follows formal education is more effective than training based on very little education. His work reflected a discussion in his country on how much formal education is necessary before factory training. The Russians concluded that five years of continuous primary education is the desirable minimum. It is perhaps significant that up to 1949 the Russians only had five years of compulsory education and yet their rate of growth was considerable.

Literacy and Economic Take-Off

Education can confer vast benefits in terms of a new approach to change in work and in society. The real question is how fast the benefits of education are to be extended to the entire population. Dr. E. Halsall[2] has produced figures which show that in 1800, when, broadly speaking, the economic take-off occurred in Great Britain, only 10 per cent of the population was literate. About 40 per cent to 50 per cent of the working male population was literate, but many of those who had learned to read and write in order to perform their work had done so outside the school with the help of various religious or other bodies.

From the economic growth standpoint, therefore, it seems as if the proportion of the population who have to be literate is much smaller than is sometimes supposed. I am not here discussing the welfare argument; that it is desirable on human grounds for the entire population to be well educated in order to develop themselves.

Secondly, literacy has flourished on the basis of opportunities for using it. History provides many examples of people who have been taught to read and write but who have lost that capacity because they did not use it. It may well be that the introduction and expansion of the postal system in Burma 20 years ago contributed more to literacy than did education.

Do we want a 'big push' to achieve universal primary education, and, if so, how soon? Or do we want to educate and generally develop certain key areas where returns from the standpoint of economic development are greatest? This second approach has extremely harsh human overtones for those areas which in the short term are to get less education than they would through the 'big push'.

1/ Jamin, V.A. Problems facing educational planners in the Soviet Union today. Paris, International Institute for Educational Planning, 1966.

2/ Halsall, Elisabeth, Economic problems and educational progress. s.l., /1966/.

Arguments which originated in high income countries, particularly in the United States, have to some extent led in developing countries to the belief that there are no limits to the desirable expansion of education. The Cobb-Douglas theorem, which provides an intellectual basis for this view, states that a major part of the growth of production in developed countries cannot be accounted for by inputs of physical capital, man hours and natural resources, but by what Cobb and Douglas sum up as the human factor - knowledge, health, skills, organization. Schultz in America[1], Aukrust in Norway, Reddaway and Smith in the United Kingdom, all argue that capital and labour as defined account for only a part of increased output per head, and that this human or 'residual' factor accounts for the rest. Denison in the United States produced a major study[2] in which he maintains that the human factor, and in particular education, has been responsible to a large degree for the United States' economic growth. Professor Becker has estimated that the return on college education is 15 per cent in the United States. These studies and reaction to them led to a lively, even violent, debate which is summed up in the book, 'The Residual Factor and Economic Growth'[3].

The Residual Factor

The concept of the residual factor is open to considerable doubt. There are questions of definition. Whether there is a residual factor depends on how you define capital and labour. Clearly, the fact that technology is advancing and capital equipment becoming more complex means that people must be more educated in order to use that technology and equipment. But developing countries should be careful how they apply this argument. A key problem in developing countries is shortage of capital. Pushing the argument to its logical conclusion, therefore, would mean that the country was educating its young people to an extent that many would be unemployed when they had finished their studies. Consequently, the limits for the development of education in developing countries must be more carefully defined than in developed countries where waste, and there can be waste, although there will always be discussion as to how waste is defined, does not have the same serious social and economic consequences.

1/ Schultz, Theodore W. The Economic Value of Education. New York, London, Columbia University Press, 1964.

2/ Denison, Edward F. The Sources of Economic Growth in the United States and the Alternative before Us. New York, Committee for Economic Development, January 1962.

3/ Organization for Economic Co-operation and Development. The Residual Factor and Economic Growth; Study Group on the Economics of Education. Paris, Organization for Economic Co-operation and Development, 1964.

Content of Education

A second criticism of these theories is that they tend to overlook the content of education. You can have education that is uneconomic in content. As Dr. Balogh wisely remarks in the paper which he prepared with Dr. Streeten[1], what would happen if education were based mainly on the teaching of ancient languages?

What should be the proper adaptation of structure of education, its content, of the curriculum, to the needs of society, whether economic, social or technical needs? What should be the organization of teaching material? This is a question on which you, as educators and educational planners, have to see clearly.

The second question is how can decisions with regard to performance and fitness of an educational system be translated into action? Inertia and conservatism exist within educational systems when it comes to change and the reason is obvious. The teacher, when he has finished his or her training has an acquired intellectual capital, and it is extremely difficult for a teacher to change in response to new developments. It is also difficult for ministries of education to examine problems of curriculum in an innovating spirit and having done so, to ensure that curricula are actually reformed and that change in content and methods actually takes place. This raises not only the question of the organization of change, but of the retraining of teachers who will be responsible for carrying through in the classroom changes which will be based on new books and methods.

Restrictive Practices

A third consideration is that the returns to education may well be a consequence of restrictive practices, such as in medicine, where frequently the number of students is limited. Restrictions may also be based on feudal, colonial or aristocratic influences. In other words, the remuneration of educated persons, on which the calculations in these studies have been based, is often related to birth or wealth. Consequently, it is less an economic than a social argument.

For instance, Professor Becker's calculation of the returns to university study in the United States (which threw light on problems of financing higher education) could be said to represent the returns to parents of wealth and position on the money they had invested in their children's university education. He showed that the return was about 15 per cent per annum. In other words, the extra salary which graduates received because of their

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1/ Balogh and Streeten, 'Education and the Development of Nations', Chicago, 1966.

higher education enabled them, had they so wished, to pay back the cost of that education in approximately six years; but for many of them this question is not relevant since their parents would not require to be reimbursed. One of the scientific difficulties involved in any comparison of this sort is to isolate returns due to education from returns due to other factors.

The fact that these young people were able to enter the university was not only due to their intellectual ability but also to their social status. Secondly, the earnings which they received as graduates were not solely due to the education itself, but also due to their parents' abilities in obtaining them employment, parental ownership of a business and so on. To be scientific one would have to isolate all these other elements from the purely educational ones.

Imperfections in the supply also accounted for higher earnings. For example, in the United States doctors earn much more than they would if there was complete freedom of entry to university medical faculties. The medical association in the United States controls entry into the medical faculties to such an extent that it is necessary to bring in foreign doctors. At this moment, there are at least three thousand Turkish and three thousand Iranian doctors practising in the United States as a consequence of this limitation and of the high incomes which doctors earn. To some extent and in some countries, in law and engineering too, earnings are not purely a consequence of education but of organized shortage.

In developing countries there are tribal and aristocratic factors which limit access to certain positions in government and administration, and indeed in university work, to members of the social elite. In those countries the individual return to education is undoubtedly very high. The question is whether this return, judged from the standpoint of the community and given limited resources for development, is not too high.

We should therefore be very careful before accepting a comparison between study and earnings as evidence of the economic advantage of education, even though it points in that general direction. Moreover, university education in a developing country should be more closely related to specific employment possibilities than in a country where waste if it does occur, is not of such immediate significance.

It would seem that, while the welfare benefits of education for its own sake may not be questioned, it is necessary to examine the amount to be spent on education from the standpoint of the opportunities of subsequent employment for graduates from the different levels of education and the importance of competing claims on limited funds within the development framework.

REQUIREMENTS FOR ECONOMIC DEVELOPMENT

What criteria should be employed in assessing how much should be spent on education compared with other development needs? An essential point of economic development planning is that the limits of total spending in a given country have to be examined within the concept of development strategy. Economic development can be seen as the result of the interplay of three factors: natural resources - (that is water, minerals, food production, scenery in the sense of tourist resources) the working population, its abilities and organization, and capital including the existing stock of machinery and financial means. A crucial problem of development is to apply savings to new investment (in schools, roads, power stations, factories, farm equipment, docks, ships and so on) so that the capital stocks of the country are increased and production and employment grow at a satisfactory pace in order to meet internal and foreign demands for goods and services.

It is an unavoidable truth that in order to invest a country must save, i.e. it must not spend all of its goods and services on consumption items. It must also save in order to pay its external debts. If it does not save its investment must be financed by capital from abroad, and in part investment of developing countries is financed in this way. A major problem, however, is finding domestic savings for investment. It has been estimated that in India approximately 4 per cent of the national income is invested in new capital, in Mexico 5 per cent, but in Western European countries as much as 15 to 20 per cent. It is therefore necessary to look at the main ways in which developing countries spend their national income in order to see what are some of the reasons for the chronic shortage of investment.

Private Consumption

A major feature of developing countries is that consumption by households and individuals and by public authorities (central and local government and other public agencies) accounts for a high proportion of total national expenditures and fixed capital expenditure financed from national savings a low one.

One reason resides in the fact that in many countries where average per capita incomes are low they are also unevenly distributed. The educated receive high salaries and the uneducated low ones. The latter cannot save and the former for a variety of reasons tend to give high priority to conspicuous consumption. Resources which could be invested are spent on motor cars, refrigerators, house equipment and so on. This is a very real problem.

A second reason, related to the first, is that a substantial proportion of the population resident in rural areas receives virtually no money incomes. It lives on what it grows, and forms the subsistance as opposed to the

monetary sector of the economy. Clearly it can contribute no money to finance investment though in some countries labour (sometimes forced) particularly in programmes of land improvement has provided a substantial contribution to rural development.

Government

In developing countries the government plays an important role in assuring the basic conditions for economic growth and in financing and undertaking investment projects on the basis of tax revenues. There is of course the political and technical problem of how much can be raised by taxation. There is opposition between government commitments for recurrent spending and its investment aims. It is here that there is competition between social expenditure, such as on education and health, defence expenditure, administration including justice and the government's investment programme. In Tanzania, for example, because of the burden of a heavy programme of recurrent social expenditure the government is obliged to rely very largely on external assistance for the fulfilment of its programme of capital development[1].

When governments raise revenues for recurrent or capital expenditures they may affect job-creating investment in the private sector. To give you one example, in Nigeria an export tax was imposed on cocoa and on groundnuts. The government wanted to use the revenue to finance its expenditure, of which education was an important element. Now what happened when this tax was imposed on these basic agricultural commodities? Who paid it? The producer not the consumer paid, because the world price is determined by world supply and demand. The world price can be raised only if all the world's producers get together, as has happened in certain cases, to fix that price. Nigeria alone was not able to pass on the export tax to the foreigner. The result of the tax was that Nigeria received the same price as before for its cocoa but part of the receipts now went to the Nigerian Government as tax. The producer therefore received a lower price for his commodity than he would otherwise have done. Consequently he had less money to spend on new equipment and materials to make his work more productive. So the export tax represented a real choice by the government: it forced the farmer to reduce his investment so that the government could increase its expenditure. This example highlights an important problem in economic development, planning namely the ways in which governments may encourage decisions by private entrepreneurs to invest.

1/ Skorov, George. Integration of Educational and Economic Planning in Tanzania, Paris, Unesco: International Institute for Educational Planning, 1966. (African monographs no. 6.).

But the conclusion seems clear. If savings are limited it is necessary to examine alternatives (and in methods of financing it) for government spending in order to select priorities which permit an adequate level of investment and a rate of growth that is higher and better balanced than it would have been without economic development planning.

LIMITS ON EDUCATIONAL SPENDING

In attempting to analyse the economic aspects of education in relation to economic development there are four specific constraints on educational spending which should be considered. The first is the limit on total expenditures in relation to the gross domestic product and government revenue. Second the limit on spending by level and type of education consistent with balance within the educational system and between its 'output' and employment opportunities; this includes the balance between formal and non-formal education. Third there are limits in terms of the territorial distribution of the effort within a country regionally and locally. Fourth, which I shall not discuss here, but which is an important point, is the limit on unit costs.

Gross Domestic Product and Expenditure on Education

Expenditure on education may amount to a higher proportion of total monetary resources than was formerly realized not only because the calculation is now more rigorously undertaken but also, because its basis was formerly often inadequate. For example it had been said in international discussions that Tanzania was devoting about 2 per cent of its total gross domestic product to education whereas it has been shown as a result of research undertaken by IIEP[1/] that since 1960 the proportion has represented some 3.5 per cent of the total GDP and over 5 per cent of monetary GDP i.e. among the highest proportions in the world. When we recall that if a developing country is spending 5 per cent of its domestic product on net fixed investment it is doing fairly well we can see that a major problem of priorities is implied by this high proportion.

The relation of educational spending[2/] to monetary GDP is the relevant one for international comparison. It is misleading to relate the monetary expenditure on education to the gross or total domestic product where this

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1/ See Knight, J.B. The Costing and Financing of Educational Development in Tanzania, Paris, Unesco, International Institute for Educational Planning, c1966.
African research monograph no. 4.

2/ Central, regional, local government spending plus fees plus estimated private educational spending.

includes a substantial element of subsistence production - that of the small farmers who do not bring their produce to market. Obviously it distorts the picture internationally also since it suggests that, as far as proportions of GDP spent on education are concerned, developing countries are far behind developed countries; it is implicitly an argument that they should spend more. It is unwise to include the subsistence sector in this computation of national product since the subsistence sector makes no monetary contribution and education is paid for with money. Educational spending should be related therefore to the monetary domestic product, and in these terms the contribution of developing countries is very substantial.

Educational Expenditure Related to Government Revenue

Expenditure on education as a share of government revenue is another useful indicator of the priority given to education in relation to other expenditures. In Ceylon, for example, educational spending represents about a quarter of total central government revenue. In recent years the proportion of education in government spending has tended to rise at the expense of other items. Here we have to distinguish between spending by central government and by regional and local government. Central government expenditure normally includes its capital contribution, mainly for school building, and its recurrent contribution which is principally for teachers' salaries. But it obviously does not include contributions made by regional and local authorities.

In some countries regional and local government contributions may be considerable. In others, specially in those which follow the French pattern, the burden may lie almost entirely on the central government. Since the central government provides most of the finance for infrastructural investment, and frequently investment in productive enterprises also, it is important to examine possibilities of financing education through local or regional finance or other sources. This is related to the problem mentioned above - the rate and structure of fixed capital formation. The lesson is that if central government spending on education goes up something else must probably go down. What is that going to be? Defence, police, transport, agriculture or investment project spending?

Spending by Level and Type of Education

If resources on education are limited it is important that the system should be organized to take account of job opportunities so that resources are well spent. In this connexion it should be remembered first that there is interaction between the different levels and types of education and that decisions taken regarding one level cannot fail to affect the rest of the system (e.g. increased enrolments in primary). This is a plea for balanced

development. Let us look at certain imbalances between educational effort and job opportunities, which planning has to change and which lead to a waste of resources.

PRIMARY EDUCATION

In developing countries there is a major discrepancy between the effort put into primary education and the effort required to ensure that on the land, and in the villages and towns, the young people who have left primary school but have not continued to secondary school still receive some training related to their work. To justify the expenditure on primary education we have to think more deeply of the primary school pupil after he has left school. This problem does not only concern the developing countries. The approach to post-school part-time education is also inadequate (though relatively less inadequate) in many developed countries.

Ideally the entire working population in a developing country should be learning something - a technical skill, a human capacity - and yet in country after country only a small fraction of the ex-school population is involved in any learning activity at all. Why is there this curious contradiction between the vast public expenditure on primary education and the minimal public expenditure on measures to make sure that education at the primary level is not lost, particularly in the context of the complex problem of rural development.

NON-FORMAL EDUCATION

In a study on formal and non-formal education in Tanzania Jane King[1/] found that total expenditure on the three types of non-formal education in the rural areas - community development, illiteracy work and agricultural development education - amounted to 5 per cent of the current budget on formal education. She asked, while she was in Tanzania, how this figure was reached, and she was told that it was not formally decided at all. That expenditure 'just grew'. Non-formal education was paid for by different ministries and different bodies and the government had not instructed the civil servants as to how these amounts should be related with expenditure on formal education. This problem is not confined to Tanzania, which in many respects can teach others a great deal as far as educational planning is concerned. Few countries have worked out logically the criteria which should guide people responsible for planning non-formal education in relation to formal education.

1/ King, Jane, Planning non-formal education in Tanzania, Paris, Unesco: International Institute for Educational Planning, 1967.

SECONDARY EDUCATION

The essential feature of secondary education is that it leads on to higher education, to teacher training at the lower level, and that it includes an important segment of technical education.

What should the balance be between these three final destinations of secondary pupils ? How much of the effort should go into teacher training ? How much into preparing students for classical, humanist studies at the higher level ? How much for preparing students for scientific studies at the higher level and how much for technical training ? Practically every country can give you a reasoned and clear justification for its expenditure on secondary-level education which leads to higher education, whereas expenditure on secondary technical education and on teacher training is often far less clearly thought out. To avoid unemployment of the educated the development of secondary and higher education should be planned in relation to estimates of future manpower needs.

HIGHER EDUCATION

At the higher level we have to consider whether expenditure on university education represents, in volume and in structure, a reasonably balanced part of national effort, or whether there is not a tendency to exaggerate higher studies at the expense of intermediate post-secondary and secondary technical and junior-teacher training. There is great prestige and, up to a point there are high rewards in university study, but let us not forget Bernard Shaw's words : 'The professions are a conspiracy against the layman.' There are clearly important advantages in having university-trained people. But it is sometimes difficult to ensure that the number of university trained personnel does not exceed any reasonable estimate of a country's needs. The nature of the problem is that the university can go beyond those basic aims of professional education which are consistent with national interests. So in appraising university education we should look at national manpower needs and employment opportunities and see that the volume of university study does not outweigh the national possibilities to employ graduates.

One example of the difficulties of ensuring a balance between technicians and university graduates can be seen in recent experience in Yugoslavia where the universities introduced a new engineering degree. This degree had two elements - the first two years contained a great deal of practical work and the second two years contained most of the theoretical work. It was intended that after the first two years many students taking the course would leave the university and become senior technicians. In fact it proved impossible to persuade these young people to leave their studies and undertake practical work, returning to their studies at a later stage.

THE TERRITORIAL DISTRIBUTION OF EFFORT

Finally there is a major strategic problem in the territorial allocation of available finance, should there be equal distribution of effort throughout the entire country; universal primary education, raising proportions of primary leavers who enter secondary school, creating universities on the basis of population or should there be concentration of incremental expenditures on those areas where, because of economic development plans the pay-off from formal and non-formal education will be greatest?

This is a very difficult question, fraught with political and social overtones. The problem of mobility of workers is of relevance also. But if it is true that expenditures on education should represent the balance between levels and types based on job opportunities does it not follow that hard decisions will also be involved concerning the concentration of effort in the areas where the development effect will be most considerable ?

CONCLUSION

Economic development is a complex achievement resulting from favourable political, social, institutional, economic and educational factors. The returns to educational spending are not unlimited; they must be examined in relation to the specific situation of each country in its economic and social development. In most developing countries there is a shortage of savings on which new fixed investment must to a large extent be based. Government plays an important rôle in planning and financing many types of new investment and creating the conditions under which private enterprises will do so. Education represents an important alternative priority, and to some extent an essential corollary, to government decisions concerning fixed investment.

In order that limited resources available to education should be well spent in relation to economic development, educational planning should have regard to (a) the integration of primary education with adequate measures for post-primary training as part of rural development; (b) change and expansion of secondary and higher education in relation to future employment possibilities; (c) creation of a mass approach to non-formal education whereby those who are working are also learning; (d) the territorial location of educational effort so as to contribute most to other types of development planning in train; (e) it is essential that great attention be paid to unit costs and the efficiency of the educational system.

Suggested additional reading

Unesco

Economic and Social Aspects of Educational Planning. Chapters I and X. Paris, Unesco, 1964.

OECD

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